RUST GEOTECH INC.

Spectral Gamma-Ray Borehole
Log Data Report

Borehole 41-01-06

Log Event A

Borehole Information

Farm : SX	**Tank :** SX-101	**Site Number :** 299-W23-133
N-Coord : 35,508	**W-Coord :** 75,665	**TOC Elevation :** 662.92
Water Level, ft : 91.80	**Date Drilled :** 12/27/1971	

Casing Record

Type : Steel-welded	**Thickness :** 0.280	**ID, in. :** 6
Top Depth, ft. : 0	**Bottom Depth, ft. :** 100	

Equipment Information

Logging System : 1	**Detector Type :** HPGe	**Detector Efficiency:** 35.0 %
Calibration Date : 03/1995	**Calibration Reference :** GJPO-HAN-1	

Logging Information

Log Run Number : 1	**Log Run Date :** 4/25/1995	**Logging Engineer:** Bob Spatz
Start Depth, ft.: 0.0	**Counting Time, sec.:** 100	**L/R :** L **Shield :** N
Finish Depth, ft. : 7.5	**MSA Interval, ft. :** 0.5	**Log Speed, ft/min.:** n/a

Log Run Number : 2	**Log Run Date :** 4/26/1995	**Logging Engineer:** Bob Spatz
Start Depth, ft.: 96.0	**Counting Time, sec.:** 100	**L/R :** L **Shield :** N
Finish Depth, ft. : 18.5	**MSA Interval, ft. :** 0.5	**Log Speed, ft/min.:** n/a

Log Run Number : 3	**Log Run Date :** 4/27/1995	**Logging Engineer:** Jerry Burnham
Start Depth, ft.: 19.5	**Counting Time, sec.:** 100	**L/R :** L **Shield :** N
Finish Depth, ft. : 6.5	**MSA Interval, ft. :** 0.5	**Log Speed, ft/min.:** n/a

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Analysis Information

Analyst : J.R. Brodeur

Data Processing Reference : Data Analysis Manual Ver. 1 Analysis Date : 7/25/1995

Analysis Notes :

Borehole 41-01-06 was logged in three log runs: run 1 from 0 to 7.5 ft, run 2 from 96 to 18.5 ft, and run 3 from 19.5 to 6.5 ft. There were two depth overlap measurement zones, and the data showed excellent repeatability. The activity in the upper 10-ft portion of the borehole was very high, causing the detection system to reach up to 40 percent dead time with a count rate of 38,000 counts per second. The total measured casing thickness is 0.313 in. The casing correction used was that for 0.33 in.

The pre- and post-survey field verification data showed good agreement in the system's performance, but there was a substantial amount of gain drift. As a result, many of the spectra had to be recalibrated during analysis for energy versus spectrum channel. However, this did not affect the efficiency of the system or the accuracy of the concentration data.

Cs-137 was the only man-made radionuclide detected. It was found at relatively high concentrations (up to 1000 pCi/g) from the surface down to about 37 ft. Below 37 ft it was found at less than 1 pCi/g except for one small higher activity zone near 53 ft.

Because the dead-time was high in the upper 10 ft of the borehole, the low intensity U-238 peak at 609 keV could not be calculated. The background and MDA are increasing because of the compton component of the Cs-137 spectrum. If the radionuclide concentration is less than MDA, only the MDA is reported and the 609 keV is considered to be not detected.

All three natural gamma emitting radionuclides show a small increase in concentration at about 65 ft.

Log Plot Notes:

Three log data plots are provided: a Cs-137 log, a natural gamma log plot, and a combination log plot. The Cs-137 log shows the concentration of Cs-137 versus depth. The MDA value is shown on these graphs as open circles. Error bars representing the 95 percent confidence interval are plotted with the concentration data points.

The natural gamma logs are shown in a separate plot to allow correlation of these data with the lithology. On the Th-232 plot, the MDA value is shown as zero at some depth locations. This zero value was a result of an anomaly in the commercial spectrum analysis software which has been corrected by the vendor. Because the MDA calculation at these few points is not significant relative to the intended use of the plot, the data were not reprocessed and corrected. Therefore, these MDA data points on the plot should be ignored.

A combination plot of individual radionuclide concentrations is provided and includes the total gamma log calculated from the spectral data as well as the Tank Farms gross gamma log obtained from the gross gamma logging system operated by WHC.